

**To:** CN=Richard Sumner/OU=COR/O=USEPA/C=US@EPA[]  
**Cc:** []  
**Bcc:** []  
**From:** CN=Phil North/OU=R10/O=USEPA/C=US  
**Sent:** Thur 9/8/2011 1:40:48 AM  
**Subject:** Re: Making connection with Bristol Bay Risk Assessment

Hi Rich,

# Ex. 5 - Deliberative

Please keep me in the loop on any further email traffic.

Thanks,  
Phil

Phillip North  
Environmental Protection Agency  
Kenai River Center  
514 Funny River Road  
Soldotna, Alaska 99669  
(907) 714-2483  
fax 260-5992  
north.phil@epa.gov

"To protect your rivers, protect your mountains."

**From:** Richard Sumner/COR/USEPA/US  
**To:** Phil North/R10/USEPA/US@EPA  
**Cc:** Richard Parkin/R10/USEPA/US@EPA  
**Date:** 09/01/2011 08:14 AM  
**Subject:** Making connection with Bristol Bay Risk Assessment

Hey Phil

FYI

In June I was visiting ANWR (vacation). Bridget Paule (TNC-Anchorage) was part of our little group. She shared with me TNC's draft risk assessment for Bristol Bay, and I shared back with her some ideas. Dave Albert (TNC-Juneau) joined the email discussion. Attached is a email-train with that exchange. Michael Szerlog suggested that I reach-out to you on such matters.

Please let me know if you join in any future discussions. My particular interest is examining how our Program can more efficiently deal with "hot projects" using available monitoring and assessment information. Other hot projects that I'm looking at include,

# Non-Responsive

Please give me a call if you would like to chat-it-up.

Have a fine long weekend,

Rich

\*\*\*\*\*

Richard Sumner  
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sumner.richard@epa.gov

----- Forwarded by Richard Sumner/COR/USEPA/US on 09/01/2011 08:55 AM -----

From: Richard Sumner/COR/USEPA/US  
To: "David Albert" <dalbert@tnc.org>  
Cc: bpaule@tnc.org  
Date: 09/01/2011 08:54 AM  
Subject: RE: Bristol Bay Risk Assessment

Hi Dave

Thanks for your note. I would like to continue exploring ideas with you about risk assessment .

Perhaps we can connect up by phone after the AFS conference. I will not be attending the meetings. I was just up in Seattle last week participating at the International Conference on Ecology and Transportation (ICOET). The city is always a fun place to visit. I'm sure you'll have a great time.

One of the topics that we can delve into a bit is cumulative effects. It's a challenging topic that agencies have grappled with for a long time, especially when dealing with project specific regulatory decisions. As you highlight in your note, there is often insufficient data for computational analysis that produces results with known levels of confidence. Perhaps even a more basic problem is having the skill set, time and resources to conduct such analysis and communicate results in way that easily informs decision-making . That's why I am intrigued with weight-of-evidence approaches to decision-making. Under those approaches, you design some landscape scenarios, apply what science you can get, and you make it work as best you can with multiple lines of logic.

Attached is an article that got me thinking on the topic. Perhaps we can discuss it in context with your work on Bristol Bay.

Have fun in Seattle,

Rich

[attachment "Weight of evidence in decision making.pdf" deleted by Phil North/R10/USEPA/US]

P.S. If you looking for good Sushi in Seattle, try Red Fin @ 612 Stewart (downtown near Westin Hotel)

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From: "David Albert" <dalbert@tnc.org>  
To: Richard Sumner/COR/USEPA/US@EPA  
Cc: "Bridget L. Paule" <bpaule@tnc.org>  
Date: 08/31/2011 04:38 PM  
Subject: RE: Bristol Bay Risk Assessment

Hi Rich,

Thanks for the feedback. I think your comments are right on the money (and very much appreciated). We view that document as a preliminary effort, and are currently in the process of refining our tools and approach in the hopes of providing a relatively flexible decision-support framework as the issues of mining in these watersheds progress.

I like your recommendation on how to frame the hypothesis, that seems like very useful approach. Also, your comments on cumulative effects and how risks may play out over time is also very good. We originally had a much more detailed discussion of cumulative effects over time, but we thought that it was somewhat too speculative, and that we didn't have sufficient data or analysis (e.g., stochastic simulation of low probability events over time) to support the discussion. In the end, we pulled it in the interest of being conservative, knowing that this is our first foray into what is likely to be a long, and very contentious debate. We'd like to better develop those aspects in the next iteration.

Thanks for your review. If you happen to be at the AFS conference in Seattle next week, I'll be at the session on salmon and hard rock mining, and would be happy to have further discussion.

best,  
Dave

David Albert  
Dir. of Conservation Science  
The Nature Conservancy, Alaska Chapter  
907-586-2301

-----Original Message-----

From: Sumner.Richard@epamail.epa.gov [mailto:Sumner.Richard@epamail.epa.gov]  
Sent: Tuesday, August 09, 2011 3:58 PM  
To: Bridget L. Paule  
Cc: Lara Hildreth  
Subject: Re: Bristol Bay Risk Assessment

Hey there Bridget

I finally had a little bit of time to peek at TNC's Bristol Bay Risk Assessment. And, I think I see a glitch. If you read the attached excerpts from the document (below), then I think you will agree that risk is very much understated. For example, the conclusion that "significant negative impacts to the aquatic ecosystem would be expected....." provides no well-defined reference to scale.

I need to ponder more if there really is a glitch, and if so, how it can be reconciled. However, off the top of my head I think there may be two things going on.

First, the approach used for risk assessment is very mechanistic ("bottom-up approach"). A lot of good thought went into analyzing the effects of individual stressors on ecosystem processes (salmon production being the endpoint). The Assessment loses steam in its attempt to roll-up the story in terms of cumulative effects; and considering weight-of-evidence.

Second, more work is needed to describe the magnitude of risk in terms of disruption at the landscape scale as affecting aquatic and terrestrial biodiversity over long time periods. Jump-up from the stream-reach and watershed scales. Think bigger than salmon. Think long time. It is about properly bounding the problem.

My intuition tells me that the overall approach would benefit from an iteration that starts by telling the risk-story in terms of cumulative effects. Explain how weight-of-evidence is used to test the hypothesis that the development scenario will not cause significant degradation. Remember, that in law, the presumption is against the discharge or the impact. In other words, it is incumbent upon development interests to demonstrate that there will not be significant degradation. The risk assessment can set the "bar" for the analysis.

Please note that these views do not represent those of EPA.

And, of course, my initial thoughts may flip once I take a closer look at the document. I really didn't dig into it all. The information I mention may already be there. If so, it didn't jump out at me.

Best regards,

Rich

Excerpts

Page 128

"In summary, it is impossible to predict the specific loss of production for salmon found within the watersheds associated with proposed mine activities. As stated previously, mine management practices have not yet been provided, and extraordinary weather events that could trigger large-scale impacts are always unknown. But, based on historical findings from other similar large hard rock mines, it can be predicted with some certainty that salmon (and other indigenous species) will exhibit some effects both temporally and spatially, with subsequent

production loss inevitable. Considering the potential for further mine development, as noted in Section 4.3 Cumulative Risk Analysis, continued emphasis is needed on assessing the possible impacts to salmon production."

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"The potential cumulative effects of various ecosystem stressors over time are reasonable cause for significant concern regarding the long-term abundance, diversity and sustainability of salmon species (and their supporting ecosystems) in this region. Although it is uncertain what will actually occur, based on historical information on physical and chemical stressors gathered for other large mines, and the known effects of mining-related heavy metals to salmon and other biological populations, significant negative impacts to the aquatic ecosystem would be expected over the life of large-scale mines in this region. Additionally, such impacts would be likely to persist and in some cases increase long after mine closure."

From: "Bridget L. Paule" <bpaule@tnc.org>  
To: Richard Sumner/COR/USEPA/US@EPA  
Cc: "Lara Hildreth" <lhildreth@tnc.org>  
Date: 06/29/2011 05:53 PM  
Subject: Bristol Bay Risk Assessment

Hi Rich,

I hope you and your wife had a great tour in Seward this past weekend and an uneventful trip home! It was great to meet you last week - I'm still partly under the influence of the Arctic, myself. Hard to get back into it, but I do want to follow up on our airstrip conversation, so here is the risk assessment that we have produced, along with the exec summary.

For background, this is the EPA outreach that we've already done with the risk assessment: In January our Conservation Science Director gave a presentation in DC to ~20 staff including Denise Keehner, Brian Frazer and Palmer Hough. Then in February he gave two more presentations to EPA Region 10 Risk Evaluation, Aquatic Resources, Tribal and Community Affairs staff including Bill Dunbar (policy advisor), Mike Szerlog (attorney), Sheila Fleming (risk evaluation), Rick Parkin (BB watershed project lead), Tami Fordham (tribal liaison), Judy Smith (community outreach), Phil North (AK) and Tiel Smith (BBNC) and to Dennis McLerran, Regional Administrator. I'm not aware of what, if any, follow up we've had since then, but I believe we've received comments back from EPA.

If you've got any questions on the risk assessment, I've cc'd our Conservation Manager Lara Hildreth. She has worked quite closely on the doc, it's preparation and roll-out and will be much better prepared to address any questions or connect you to the science staff involved.

Meanwhile, I'm working on getting the best of my arctic photos up on a

Picasa page that I can share with you all  
Ex. 6 - Personal Privacy  
Ex. 6 - Personal Privacy  
I'd love to see others' photos as well, when you get settled.

Cheers,

Bridget

[attachment "TNC ERA Summary and Conclusions.pdf" deleted by Richard Sumner/COR/USEPA/US] [attachment "TNC Ecological Risk Assessment.pdf" deleted by Richard Sumner/COR/USEPA/US]